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Abstract

PROBLEM TO BE SOLVED: To improve a heat resistant characteristic and stress crack resistance by a method wherein composing material and a tensile breakage strength are restricted.

SOLUTION: Material quality of this separator contains super-high molecular weight polyethylene of 5wt.% or more with a viscosity mean molecular weight of 500000 or more, polyethylene with an entire viscosity mean molecular weight of 350000 or more and some fine powder silica. Organic liquid is added to it and they are uniformly heated and kneaded, thereafter a sheet-like film is made by an infection molding process, and the organic liquid state is extracted to attain a separator. This separator has a tensile breakage strength in its longitudinal direction of 30kg/cm² or more and a value in which a strength in a longitudinal direction is divided by a strength in a lateral direction is more than 0.4 and less than 3. Then, since it has a superior chemical resistant characteristic, a high permeability performance and a uniform three-dimensional porous structure having many fine holes, it has a superior stress crack resistant characteristic.